



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,239	10/28/2003	Richard Hodges	OCTVP008	5275

7590	07/09/2007
------	------------

Plantronics Inc
Legal/Intellectual Property Department
345 Encinal Street
Santa Cruz, CA 95060

EXAMINER	
SINGH, RAMNANDAN P	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
07/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<div style="border: 1px solid black; width: 150px; height: 20px; margin: 0 auto;"></div> <p style="text-align: center;">Office Action Summary</p>	Application No. 10/696,239	Applicant(s) HODGES ET AL.	
	Examiner Ramnandan Singh	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41 and 42 is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 11-14, 17, 20-25, 27-30, 33-35, 37-40 is/are rejected.
- 7) ☒ Claim(s) 5-10, 18, 19, 26, 31, 32 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-4, 11-14, 17, 20-25, 27-30, 33-35, 37-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Etter et al. (US 6,760,435), hereinafter referenced as Etter.

Regarding claim 1, Etter discloses a method and apparatus for network speech enhancement. In addition, Etter discloses a level adjusting device for use with a near-end telephone, the near-end telephone being operable to generate an outgoing signal directed to a far-end telephone and to receive an incoming signal generated at least in part by the far-end telephone, the device comprising: a first signal processor operable to dynamically adjust

a first signal level associated with the outgoing signal with reference to the first signal level; and a second signal processor operable to dynamically adjust a second signal level associated with the incoming signal with reference to the second signal level; wherein the first and second signal processors are further operable to control a loop gain to inhibit loop instability, and wherein the first and second signal processors are operable to dynamically adjust the first and second signal levels in a plurality of frequency bands, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 3, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses wherein the plurality of bands comprises one of 2, 3, 4, and 5 bands, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 4, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses wherein the plurality of bands are selected such that a range of frequencies associated with DTMF signaling is entirely encompassed within a single band, as disclosed at column 4, line

41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 11, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses wherein the incoming and outgoing signals comprise analog signals, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 12, Etter discloses everything disclosed as applied above (see claim 11), in addition Etter discloses wherein the analog signals conform to one of a US or international standard specification for connecting a telephone set to a telephone network, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 13, Etter discloses everything disclosed as applied above (see claim 11), in addition Etter discloses circuitry for separating and combining the incoming and outgoing signals for processing by the first and second signal processors, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 14, Etter discloses everything disclosed as applied above (see claim 13), in addition Etter discloses wherein the circuitry comprises first and second hybrids, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 17, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses bypass circuitry operable to bypass the first and second signal processors, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 20, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses a near-end echo canceller operable to reduce echo in the outgoing signal, and a far-end echo canceller operable to reduce echo in the incoming signal, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 21, Etter discloses everything disclosed as applied above (see claim 20), in addition Etter discloses a near-end speech detector for detecting near-end speech and controlling the near-end echo canceller in response thereto, and a far-end speech detector for detecting far-end speech and controlling the far-end echo canceller in response thereto, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 22, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses wherein the first and second signal processors are operable to control the loop gain by decreasing at least one of a first gain associated with the first signal processor and a second gain

associated with the second signal processor with reference to a combined gain which represents at least a portion of the loop gain, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 23, Etter discloses everything disclosed as applied above (see claim 22), in addition Etter discloses wherein the first and second signal processors are Operable to control the loop gain by decreasing the first gain when the outgoing signal does not correspond to outgoing speech energy, and decreasing the second gain when the incoming signal does not correspond to incoming speech energy, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 24, Etter discloses everything disclosed as applied above (see claim 22), in addition Etter discloses wherein each of the first and second gains comprises a plurality of gain components each of which contributes to the combined gain, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 25, Etter discloses everything disclosed as applied above (see claim 24), in addition Etter discloses wherein the first and second signal processors are operable to control the loop gain by decreasing only selected ones of the plurality of gain components, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 27, Etter discloses everything disclosed as applied above (see claim 24), in addition Etter discloses where the first and second signal processors are further operable to inhibit increases in selected ones of the gain components in the absence of speech energy, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 28, Etter discloses everything disclosed as applied above (see claim 22), in addition Etter discloses wherein the combined gain includes a loss component determined with reference to the incoming and outgoing signals, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 29, Etter discloses everything disclosed as applied above (see claim 28), in addition Etter discloses wherein the loss component comprises an estimate of an echo return loss, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 30, Etter discloses everything disclosed as applied above (see claim 29), in addition Etter discloses wherein the estimate is determined with reference to a difference signal representative of a difference between a return energy signal corresponding to the incoming signal and an outgoing energy signal corresponding to the outgoing signal, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claim 33, Etter discloses everything disclosed as applied above (see claim 1), in addition Etter discloses wherein the first and second signal processors comprise at least one computer readable medium having computer program instructions stored therein for effecting the dynamic adjustment of the first and second signal levels, as disclosed at column 4, line 41 through column 6, line 14 and exhibited in figure 2.

Regarding claims 34-35, 37-40, they are interpreted and thus rejected for the reasons set forth in the above rejections.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Etter as applied to claim 1 above, and further in view of well known prior art (MPEP 2144.03).

Regarding claim 15 and 16, Etter disclose everything claimed, as applied above, (see claim 1), however, Etter fails to disclose digital signals. However, the examiner takes official notice of the fact that it was well know in the art to provide digital.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Etter by specifically providing digital, for the purpose of providing better sound quality.

Allowable Subject Matter

5. Claims 41-42 are indicated allowable.
6. Claims 5-10, 18-19, 26, 31-32 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 41 recite a level adjusting device and limitations for the following: "wherein the each of the signal processors comprises a static gain

control component and a dynamic gain control component, the static gain control component being generally to statically adjust the corresponding signal level and is generally static at least for the duration of each telephone call and the dynamic gain control component being to dynamically adjust the corresponding signal level". The prior art does not teach these limitations. Therefore, claim 41 is indicated allowable. Claim 42 being dependent from claim 41 is also indicated allowable.

Response to Arguments

7. Applicant's arguments filed on Apr 02, 2007 have been fully considered but they are not persuasive.

Applicant's argument—"As is evident, Etter neither discloses nor suggests dynamically adjusting both far- and near-end signal in a plurality of frequency bands, as generally recited in independent claim 1" on page 2.

Examiner's response---Examiner respectfully disagrees. Etter uses a bank of analysis filter (60) comprising a set of 32 filters to transform the time domain signal to a plurality of frequency bands [Fig. 2; col. 4, line 50 to col. 5, line17].

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(i) Le Damany et al [US 5,870,137] optimize listening comfort during a telephone conversation [Whole document];

(ii) Shimada teaches using two level detectors to control the gain [Figs. 1-3; col. 2, line 18 to col. 6, line 68]; and

(iii) Harrow et al [US 7,046,792 B2] teach a transmit/receive arbitrator [Whole document].

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The

fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh
Examiner
Art Unit 2614

A handwritten signature in black ink, appearing to read 'R Singh', with a horizontal line drawn underneath it.